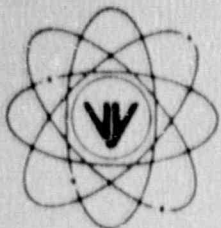


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

REPLY TO:
ENGINEERING OFFICE

580 MAIN STREET
BOLTON, MA 01740
(508) 779-6711

July 17, 1990

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References: a) License No. DPR-28 (Docket No. 50-271)
b) Letter, USNRC to VYNPC, NVY 90-055, Bulletin 90-01,
dated 3/9/90

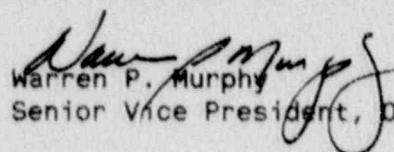
Dear Sir:

Subject: Response to Bulletin 90-01: Loss of Fill-Oil
in Transmitters Manufactured by Rosemount

Bulletin 90-01 [Reference b)] requested addresses to promptly identify and take appropriate corrective actions for Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters manufactured by Rosemount that may be leaking fill-oil.

The purpose of this letter is to provide Vermont Yankee's response to Bulletin 90-01 [Attachment A)]. We trust that this information is responsive to the requirements of the Bulletin; however, if you require further information or have additional questions, please contact this office.

Very truly yours,


Warren P. Murphy
Senior Vice President, Operations

/dm

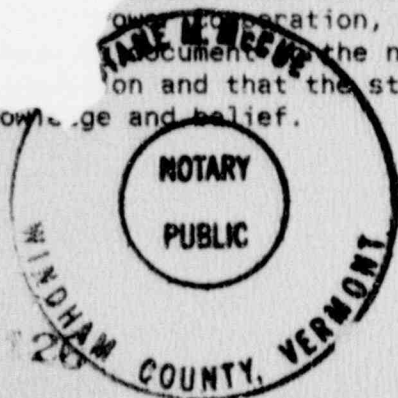
cc: USNRC Regional Administrator, Region I
USNRC Resident Inspector, VYNPS
USNRC Project Manager, VYNPS

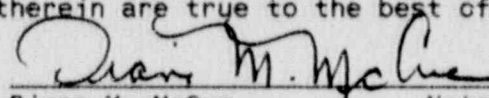
STATE OF VERMONT)

)ss

WINDHAM COUNTY)

ersonally appeared before me, Warren P. Murphy, who, being duly
state that he is Senior Vice President, Operations of Vermont Yankee
own operation, that he is duly authorized to execute and file the
document, the name and on the behalf of Vermont Yankee Nuclear Power
on and that the statements therein are true to the best of his
known age and belief.




Diane M. McCue Notary Public
My Commission Expires February 10, 1991

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RESPONSE TO NRC BULLETIN # 90-01
LOSS OF FILL-OIL IN TRANSMITTERS MANUFACTURED BY ROSEMOUNT

References:

- 1 NRC Bulletin #90-01
- 2 Rosemount Technical Bulletin #4 12/22/89
- 3 NUMARC Letter 4/16/90
- 4 Draft EPRI Document "Methods for Enhancing Surveillance to Detect Incipient Failures of Rosemount 1153 Transmitters.
- 5 Rosemount 10CFR21 Notification 2/7/89

DISCUSSION

This response is written to provide specific resolutions/responses to the REQUESTED ACTIONS and the REPORTING REQUIREMENTS sections of NRC Bulletin 90-01. Listed is each item from the REQUESTED ACTIONS and REPORTING REQUIREMENTS followed by the Vermont Yankee (VY) response. Additional Actions are also provided.

REQUESTED ACTIONS (Operating Reactors) p.6

All holders of operating licenses for nuclear power reactors are, within 120 days after receipt of this bulletin, requested to:

- 1 Identify Model 1153 Series B, 1153 Series D, and Model 1154 pressure or differential pressure transmitters, excluding Model 1153 Series B, 1153 Series D, and Model 1154 transmitters manufactured by Rosemount subsequent to July 11, 1989, that are currently utilized in either safety-related systems or systems installed in accordance with 10 CFR 50-62 (the ATWS rule).

Response:

The following Rosemount 1153 transmitters are used at Vermont Yankee (VY):

Tag No.	Model No.	Op Press (PSIG)
PT 2-3-52 (C,D)	1153GB9PA	1000
LT 2-3-73 (A,B)	1153DB5PA	1000
* LT 2-3-67	1153DB4PA	1000
* LT 2-3-68	1153DB4PA	1000
LT 2-3-231 (A,B, C,D,E,F,G,H)	1153DB4PG	<100
DPT 10-91 (A,B)	1153DB7PA	<100
FT 10-109 (A,B)	1153DB5PA	<100
FT 10-111 (A,B)	1153DB6PA	<100
LT 16-19-10 (A,B)	1153DB5PG	<100
PT 16-19-29 (A,B)	1153AB7	<100
PT 16-19-36 (A,B)	1153AB6PA	<100

- * Transmitters LT 2-3-67 and LT 2-3-68 are not Safety Class Electrical (SCE) and do not perform a safety related or ATWS function. Per NUMARC letter of 4/16/90 these transmitters are excluded from the scope of NRC Bulletin 90-01. The remaining listed transmitters are subject to this bulletin per the above criteria.

It should be noted that Rosemount 1154 transmitters are not used at VY.

- 2 Determine whether any transmitters identified in Item 1 are from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil. Addressees are requested not to utilize transmitters from these suspect lots in the reactor protection or engineered safety features actuation systems; therefore, addressees are requested to develop and implement a program to replace, at the earliest appropriate opportunity, transmitters from these suspect lots in use in the reactor protection or engineered safety features actuation systems.

Response:

Rosemount identified and provided VY (Ref #5, 10CFR21 notification) with a list of three transmitters with potential lot manufacturing concerns. One of these was in the VY stock system and is being returned to Rosemount for sensor module replacement on VY PO# 40764. The other two transmitters are LT 16-19-10A/B which are for indication only and are not used in any RPS or ESF Actuation Systems.

- 3 Review plant records (for example, the three most recent calibration records) associated with the transmitters identified in Item 1 above to determine whether any of these transmitters may have already exhibited symptoms indicative of loss of fill-oil. Appropriate operability acceptance criteria should be developed and applied to transmitters identified as having exhibited symptoms indicative of loss of fill-oil from this plant record review. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria should be addressed in accordance with the applicable technical specifications. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria and are not addressed in the technical specifications should be replaced at the earliest appropriate opportunity.

Response:

VY plant historical data was reviewed for all transmitters within the scope of NRC Bulletin 90-01. The data was typically reviewed for the last 7 to 8 calibrations or back to 1982, whichever came first.

Acceptance criteria has been developed and has been applied to the past (as well as future) data to assist in identifying loss of fill-oil.

Overall VY historical data trending does not support the criteria for an oil leak failure concern based on Zero Drift for any Rosemount 1153 transmitter presently installed at VY. Investigation of Rosemount 1153 transmitters which have failed does not conclude any of the failures were due to a loss of fill-oil.

- 4 Develop and implement an enhanced surveillance program to monitor transmitters identified in Item 1 for symptoms of loss of fill-oil. This enhanced surveillance program should consider the following or equally effective actions:
- a) Ensuring appropriate licensee personnel are aware of the symptoms that a transmitter, both during operation and during calibration activities, may exhibit if it is experiencing a loss of fill-oil and the need for prompt identification of transmitters that may exhibit these symptoms;

Response:

Operations training was performed to ensure licensed personnel are aware of the symptoms of loss of fill-oil, and need for prompt identification of these transmitters.

I/C training has been performed to ensure technicians are aware of the symptoms (sluggish response during calibration, Zero Drift, and/or failure to fully span) of loss of fill-oil.

- b) Enhanced transmitter monitoring to identify sustained transmitter drift;

Response:

VY I/C department has developed an enhanced surveillance program to monitor transmitters for symptoms of loss of fill-oil. The loss of fill-oil is a function of pressure on the transmitter sensor, or to be more concise it requires pressure to cause oil to be lost. This concept is supported or effectively stated in References 2,3 and 4.

The following transmitters have an operating pressure of <100 PSIG and will remain on their regular calibration cycle of 18 months:

LT 2-3-231A	LT 2-3-231B	LT 2-3-231C	LT 2-3-231D
LT 2-3-231E	LT 2-3-231F	LT 2-3-231G	LT 2-3-231H
DPT 10-91A	DPT 10-91B	FT 10-109A	FT 10-109B
FT 10-111A	FT 10-111B	LT 16-19-10A	LT 16-19-10B
PT 16-19-29A	PT 16-19-29B	PT 16-19-36A	PT 16-19-36B

The following transmitters are subjected to Reactor Vessel pressure (approx 1000 psia) and will be subject to an enhanced surveillance schedule.

PT 2-3-52C and D - will be calibrated every 6 months or until the trip function of these instruments are removed and placed on PT 2-3-56A thru D.

LT 2-3-73A and B - will be calibrated every 6 months until these instruments are replaced by Rosemount transmitters not affected by NRC Bulletin 90-01.

I/C Engineering will obtain and trend all calibration data from corrective maintenance and/or surveillance activities for as long as the above 24 Rosemount 1153 transmitters are applicable to the requirements of NRC Bulletin 90-01. These trends will be a continuation of the VY historical data trends already performed.

Acceptance criteria has been developed and will be applied to the trended data to assist in identifying loss of fill-oil.

- c) Review of transmitter performance following planned or unplanned plant transients or tests to identify sluggish transmitter response;

Response:

Enhanced operator awareness and I/C calibrations should identify sluggish response during transients.

- d) Enhanced awareness of sluggish transmitter response to either increasing or decreasing test pressures during calibration activities;

Response:

I/C training has been performed to ensure technicians are aware of the symptoms (sluggish response during calibration, Zero Drift, and/or failure to fully span) of loss of fill-oil.

- e) Development and implementation of a program to detect changes in process noise; and,

Response:

A program to monitor for changes in process noise will not be implemented as monitoring for sustained transmitter drift is sufficient to determine the onset of transmitter loss of fill-oil.

- f) Development and application to transmitters identified as having exhibited symptoms indicative of loss of fill-oil of an appropriate operability acceptance criteria. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria should be addressed in accordance with the applicable technical specification. Transmitters identified as having exhibited symptoms indicative of loss of fill-oil that do not conform to the operability acceptance criteria and are not addressed in the technical specifications should be replaced at the earliest appropriate opportunity.

Response:

VY has no transmitters installed for which an oil leak failure concern based on Zero Drift exists. This requested action is not applicable at this time. Any future potential failure will be subject to the VY developed acceptance criteria.

- 5 Document and maintain in accordance with existing plant procedures a basis for continued plant operation covering the time period from the present until such time that the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil in use in the reactor protection or engineered safety features actuation systems can be replaced. In addition, while performing the actions requested above, addressees may identify transmitters exhibiting symptoms indicative of loss of fill-oil that do not conform to the established operability acceptance criteria and are not addressed in the technical specifications. As these transmitters are identified, this basis for continued plant operation should be updated to address these transmitters covering the time period from the time these transmitters are identified until such time that these transmitters can be replaced. When developing and updating this basis for continued plant operation, addressees may wish to consider transmitter diversity and redundancy, diverse trip functions (a separate trip function that may also provide a corresponding trip signal), special system and/or component tests, or (if necessary) immediate replacement of certain suspect transmitters.

Response:

As discussed in item #2, VY has identified the three transmitters with potential lot manufacturing concerns and determined that none are used in any RPS or ESF Actuation System. Justification for continued use in any RPS or ESF Actuation System is not applicable.

REPORTING REQUIREMENTS (Operating Reactors) p.8

1 Provide, within 120 days after receipt of this bulletin, a response that:

- a) Confirms that Items 1, 2, 3, 4 and 5 of Requested Actions for Operating Reactors have been completed.

Response:

Requested Actions have been performed for Items 1 thru 5, as stated in above responses.

- b) Identifies the indicated manufacturer; the model number, the system the transmitter was utilized in; the approximate amount of time at pressure; the corrective actions taken; and the disposition (e.g., returned to vendor for analysis) of Rosemount Model 1153 Series B, Model 1153 Series D, and Model 1154 transmitters that are believed to have exhibited symptoms indicative of loss of fill-oil or have been confirmed to have experienced a loss of fill-oil. This should include Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters manufactured after July 11, 1989.

Response:

Overall VY historical data trending does not support the criteria for an oil leak failure concern based on Zero Drift for any Rosemount 1153 transmitter presently installed at VY. Investigation of Rosemount 1153 transmitters which have failed does not conclude any of the failures were due to a loss of fill-oil.

- c) Identifies the system in which the Model 1153 Series B, 1153 Series D, and Model 1154 transmitters from the manufacturing lots that have been identified by Rosemount as having a high failure fraction due to loss of fill-oil are utilized and provides a schedule for replacement of these transmitters which are in use in the reactor protection or engineered safety features actuation systems.

Response:

The three transmitters identified under the Rosemount 10CFR21 notification for lot manufacturing concerns are:
 LT 16-19-10A - Indication of Torus water level, no trip function.
 LT 16-19-10B - Indication of Torus water level, no trip function.
 Stock Spare - Being returned to Rosemount for sensor replacement.

As none of these transmitters are used in any RPS or ESF Actuation System, a schedule for replacement of these transmitters is not applicable.

- 2 Model 1153 Series B, Model 1153 Series D and Model 1154 transmitters that, subsequent to providing the response required by Item 1 above, exhibit symptoms of loss of fill-oil or are confirmed to have experienced a loss of fill-oil should be reviewed for reportability under existing NRC regulations. If determined not to be reportable, addressees are requested to document and maintain in accordance with existing plant procedures, information consistent with that requested in Item 1 b) above for each transmitter identified.

Response:

The VY enhanced surveillance program and/or the historical data trending will be an ongoing process, with any loss of fill-oil failure reviewed for reportability concerns. Documentation of transmitter failures will be maintained as required per existing plant/departmental procedures.

ADDITIONAL ACTIONS

VY has performed actions in addition to the REQUESTED ACTIONS and the REPORTING REQUIREMENTS of NRC Bulletin 90-01.

- 1 VY has reviewed all Rosemount 1153 transmitters installed and subjected them to the 60,000 psi-month criteria and Utility Decision Tree of Rosemount Bulletin #4. All transmitters except PT 2-3-52C (replaced in 10/88) are exempt from diagnostic guidelines, per criteria of Rosemount Bulletin #4. Rosemount believes transmitters meeting this criteria are at an acceptably low risk of failure. NUMARC also believes this is a credible approach. While the NRC may not be in complete agreement with this method, it does provide an additional level of confidence that a loss of fill-oil will not occur.
- 2 VY has generated PO# 40764 and set up a "window" with Rosemount to return all 1153 stock spares (24 total) to Rosemount for module replacement. This is consistent with Rosemount Bulletin #4. The "window" is in July 1990.